REMARKS

The Applicants would first like to thank the Examiner for extending the courtesy of a telephonic interview with the Applicants and their representative on October 18, 2004. As discussed in the interview, the Applicants believe that the synthetic microspheres claimed in their invention have properties that are distinguishable from the various inorganic spheres cited by the Examiner in the Office Action. By this paper, the Applicants have amended the claims to further point out and distinguish their invention from the examples cited by the Examiner. As such, with this amendment, Claims 1-16 are pending in the present application. Claims 1, and 11-15 have been amended and Claims 16 has been added. In view of the foregoing amendments and the following remarks, Applicants respectfully request reconsideration and allowance of this application.

Obviousness Type Double Patenting

The Examiner rejected Claims 1-15 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-45 of U.S. Patent No. 6,572,697 to Gleeson et al. The Examiner indicated that a timely filed terminal disclaimer in compliance with 37 C.F.R. §1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided that the conflicting application or patent is shown to be commonly owned with this application. Applicants respectfully request the Examiner to hold the double patenting rejection in abeyance until allowable claims are identified in the above-referenced application.

Claim Rejections-35 U.S.C. §§ 102/103

The Examiner rejected Claims 1-15 under 35 U.S.C. §102(a and b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Garnier et al (US 6,656,265), Brothers et al. (US 6,660,078 or US 6,648,961), Dronchon et al. (US 6,626,991), Tonyan et al. (US 6,620,487), Bosco et al. (US 5,164,003), Bescup et al. (US 4,837,069), Douden (US 4,657,810), Delmonico (US 4,623,390), Rizer et al. (US 4,504,320), Miller et al. (US 4,501,830), Hinterwaldner et al. (US 4,362,566), Ballard (US 4,332,618), Powers et al. (US 4,370,166, US 4,252,193, or US 4,305,758), Wassell et al. (US 4,235,836), Tinsley et al. (US 4,234,344), Beck (US 4,111,713), Rohatgi (US 5,899,256), Peters (US 4,687,752), Pechacek et al. (US 3,873,475), or Gebhardt (US 3,782,985).

The Examiner indicated that all of the above cited references teach composition that can be used for building materials comprising hollow inorganic spheres such as fly ash cenospheres, hollow glass microspheres, or hollow ceramic microspheres. The Examiner's position appears to be that all of these types of inorganic spheres read on Applicants' claimed synthetic microspheres. Applicants respectfully disagree with the Examiner's conclusions and submit that the synthetic microspheres of Applicants' invention are clearly distinguishable from the inorganic spheres cited by the Examiner. (See, *e.g,* Claim 1 as amended)

First, the Examiner asserts that *ceramic microspheres* disclosed in these various references would contain minimal alkali content and thus would also meet the limitation for less than 10 wt.% alkali metal oxide content as recited in Claim 1. However, Applicants respectfully submit that ceramic materials are generally known to have a higher alkali metal oxide content (*e.g.,* greater than 10 wt.%). For example, in accordance with information published in Ceramic Material Database, a typical ceramic material such as Feldspar contains about 10-15% alkali metal oxide such as K_2O or Na_2O. In fact, the ceramic material Feldspar is considered to be one of the relatively few insoluble sources of alkali metal oxides. A print-out from the Ceramic Materials Database showing the Feldspar composition is attached hereto as Exhibit A. Furthermore, none of the cited references that disclose the use of ceramic microspheres teach or suggest a microsphere as comprising about 0.1-50 wt.% binding agent, which is recited in amended Claim 1.

The Examiner also asserts that *glass microspheres* disclosed in the prior art would have been expected to fall within this composition for alkali metal oxide since most glasses are soda lime silica glasses or borosilicate glasses and thus would have been understood by one of ordinary skilled in the art to have an amount of alkali oxide below 10 wt.%. Again, the Applicants would like to point out that none of these "glass microspheres" references appear to positively teach the microspheres as containing about 0.1-50 wt.% binding agent (See *e.g,* amended Claim 1). Moreover, in accordance with textbook data, soda lime, a common type of glass, has an alkali metal oxide (Na_2O) content of at least 15 wt.% which is greater than the 10% recited in amended Claim 1. (Please see Table 3.1 of *Handbook of Glass Properties* attached hereto as Exhibit B).

With regards to the Examiner's position that *fly ash cenospheres* also read directly upon the synthetic microspheres, Applicants respectfully disagree and note that typical fly ash

cenospheres have a very low calcium content, typically less than 1 wt. %, whereas Applicants' microspheres are designed to have a higher calcium content, for example in some embodiments, higher than 5.2 wt. % as shown in Table 13 of the specification. Moreover, none of the references that disclose fly ash cenospheres positively teach that the fly ash cenospheres comprise about 0.1-50 wt.% of a binding agent.

In view of the foregoing, the Applicants respectfully submit that the amended claims are patentable over the cited prior art references.

Claim Rejections-35 U.S.C. §112

The Examiner also rejected Claims 1-15 under 35 U.S.C. §112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention. Specifically, the Examiner indicated that Claim 1 is indefinite because the Examiner believes that Claim 1 reads merely upon any composition teaching a synthetic microsphere or fly ash cenosphere. As discussed in the telephonic interview with the Examiner, the Applicants have amended Claim 1 to further point out and distinguish the specific identity or component of the synthetic microspheres incorporated in the claimed building material. Specifically, the amended Claim 1 recites the synthetic microspheres as *comprising about 0.1-50 wt.% of a binding agent* and *having a calcium content higher than that of cenospheres derived from coal combustion*, which the Applicants believe are distinguishable features from the inorganic spheres cited by the Examiner.

The Examiner also indicated that Claim 11 is indefinite because the so labeled "natural" cenopheres are not naturally occurring such as volcanic ash (cenosphere). As discussed, Applicants have amended Claims 11 to replace the term "natural cenospheres" with "cenospheres derived from coal combustion". The Examiner also rejected Claims 12-15 as indefinite regarding the terms "comprises a pillar", "comprises a roofing tile", "comprising siding', and "comprising a wall". The Applicants have amended Claims 12-15 according to the Examiner's suggestions. Therefore, Applicants respectfully request the Examiner to withdraw these rejections.

Objection to Specification and Terminology Contrary to Accepted Meaning

The Examiner also objected to the specification with respect to usage and defining of the term "synthetic microspheres" as not to include harvested cenospheres which are a by-product of burning coal in coal fired power stations. The Examiner requested the Applicant to amend the

specification to remove the negative limitation that "synthetic hollow microspheres" or "synthetic microspheres" are defined not to include harvested microspheres from burning coal in a coal power plant. Applicants respectfully submit that the terms "synthetic hollow microsphere" or "synthetic microsphere" are herein defined as man-made microspheres that are made from a synthetic process other than the coal combustion process. Applicants have amended the specification accordingly to clarify this point.

CONCLUSION

In view of the foregoing, Applicants respectfully submit that the above-referenced application is in condition for allowance and respectfully requests the same. Should there be any additional issues that can be resolved by an examiner's amendment, the Examiner is respectfully requested to call the undersigned at the number shown below. Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 2/16/2005

By: _____

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Feldspar

Chemistry		Volatiles	
K2O	16.920	LOI	0.500
Al2O3	18.320		
SiO2	64.760		

No Mineralogy defined

No Temperatures defined

No Links to other materials defined

Hazards

- Feldspar

Miscellaneous

- **Family:** Feldspar
- **Region:** None
- **Mined At:** Unspecified
- **Raw Mineral:** No
- **Generic:** Yes

Notes

Feldspar powders are made from crushed crystalline rock containing a mixture of aluminum silicates of sodium and potassium (with minor amounts of lithium or calcium). They contain 10-15% alkali (K2O, Na2O) and melt well at medium to high temperatures and are an economic source of flux.

Feldspar in bodies promotes vitrification by forming a glassy phase that 'cements' more refractory particles together and triggers the formation of mullite from clay mineral. In glazes it promotes melting at medium and high temperatures (feldspars are the primary ingredient in most high temperature raw glazes).

In glazes feldspars are used mainly as a source of alkalis. Since feldspars are mineral compounds of silica, alumina and fluxes; they are often viewed as 'natural frits' and are among the relatively few insoluble sources of K2O, Na2O and Li2O. No other raw material is closer to being a complete glaze on its own than feldspar. Since feldspars contain a complex mix of oxides, ceramic chemistry calculations are needed to 'juggle' a recipe to achieve the desired

EXHIBIT B

TABLE 3.1

Approximate Compositions of Important Commercial Silicate Glasses (in wt. %)

Glass type	Corning number	Kimble (Owens-Illinois) number	SiO_2	B_2O_3	Na_2O	K_2O	MgO	CaO	PbO	Al_2O_3
Soda-lime	0080	R-6	73		15		4	7		1
Pyrex borosilicate	7740	KG-33	81	13	4					2
Potash–soda–lead	0010	KG-1	62		7	7			22	2
Lime–magnesia aluminosilicate	1720	EZ-1	61	5	1		7	8		17
Sodium borosilicate	7050	K-705	68	24	6					2
E fiber glass			54	8	1		1	21		15